

What is claimed is:

1. A spherical aberration correcting apparatus comprising:

a recording unit configured to record a piece of information through radiation of an optical beam onto an optical disk;

5 a reflected-light level detecting unit configured to detect a level of light formed of the optical beam reflected from the optical disk under a recording operation for the information;

a correction amount deciding unit configured to decide a correction amount for spherical aberration on the basis of the level of the reflected-light; and

10 a spherical aberration correcting unit configured to correct the spherical aberration by using the correction amount.

2. The spherical aberration correcting apparatus according to claim 15 1, wherein the correction amount deciding unit comprises:

a determining element configured to determine whether or not the spherical aberration obtained after the aberration correction has been improved, by mutually comparing both levels of the reflected light obtained before and after the aberration correction carried out by the spherical aberration correcting unit;

20 a first processing element configured to update the correction amount by changing the correction amount in a direction of either the same positive or negative polarity as the polarity used for deciding the correction amount last time, the spherical aberration being subject to changes in the direction of either the positive or negative polarity, in cases where it is determined by the determining unit that the spherical amount has been improved; and

30 a second processing element configured to delete the correction amount currently set but decided last time, in cases where it is determined by the determining element that the spherical amount has not to be improved.

3. The spherical aberration correcting apparatus according to claim 2, wherein the correction amount deciding unit further comprises

35 a third processing element configured to update the correction amount by changing the correction amount in a direction of either the

positive or negative polarity that is opposite to the polarity used for deciding the correction amount last time, in cases where it is determined by the determining unit that the spherical amount has not to be improved.

5           4. The spherical aberration correcting apparatus according to claim 1, wherein the reflected-light level detecting unit is configured to output a pit level of the optical beam under the recording operation as a signal indicative of the level of the reflected-light.

10           5. The spherical aberration correcting apparatus according to claim 1, wherein the reflected-light level detecting unit comprises:

          a detecting element configured to detect a pit level of the optical beam under the recording operation and at least one of a read level and a write level; and

15           a calculation element configured to calculate a pit ratio indicating a ratio between the pit level and one of the read level, the write level, and a recording power and to output the pit ratio as a signal indicative of the level of the reflected-light.

20           6. The spherical aberration correcting apparatus according to claim 1, further comprising

          a controlling unit configured to enable the reflected-light level detecting unit, the correction amount deciding unit, and the spherical aberration correcting unit to perform the correction for the spherical  
25           aberration in response to a start of the recording operation.

          7. A spherical aberration correcting method comprising the steps of:

          recording a piece of information through radiation of an optical beam  
30           onto an optical disk;

          detecting a level of light formed of the optical beam reflected from the optical disk under a recording operation for the information;

          deciding a correction amount for spherical aberration on the basis of the level of the reflected-light; and

35           correcting the spherical aberration by using the correction amount, wherein the recording step is continued until the recording operation

for the information is instructed to stop, during which time the light level detecting step, the correction amount deciding amount, and the spherical aberration correcting step are repeatedly performed in sequence.